WHAT IS CLAIMED IS

1. A light source drive which modulates a light source so as to cause the same to emit a light, comprising:

a waveform shaping part which corrects a deformation of a light waveform of the light to be emitted from said light source.

2. A light source drive which modulates a light source so as to cause the same to emit a light, comprising:

a superposition current generation part which generates a superposition current approximately corresponding to a charging/discharging current needed for a capacitance occurring in parallel to said light source for a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of a drive current for said light source; and

an addition/subtraction part which adds to or subtracts from the drive current the superposition current generated by said superposition current generation part.

3. The light source drive as claimed in claim 2, further comprising:

a superposition time control part which controls a superposition time according to said capacitance for which the superposition current is generated.

4. The light source drive as claimed in claim 2, further comprising:

a superposition current control part which controls the superposition current according to said capacitance.

5. The light source drive as claimed in claim 2, further comprising:

a superposition time control part which controls a superposition time according to said capacitance for which the superposition current is generated; and

a superposition current control part which controls the superposition current in the superposition time controlled by said superposition time control part.

6. The light source drive as claimed in claim 3, wherein:

said superposition time control part controls the superposition time according to a change amount of the drive current.

7. The light source drive as claimed in claim 5, wherein:

said superposition time control part controls

the superposition time according to a change amount of the drive current.

8. The light source drive as claimed in claim 4, wherein:

said superposition current control part controls the superposition current value according to a change amount of the drive current.

9. The light source drive as claimed in claim 5, herein:

said superposition current control part controls the superposition current value according to a change amount of the drive current.

10. A light source drive which modulates a

light source so as to cause the same to emit a light, comprising:

an output impedance control part which changes an output impedance value of a drive current output part which provides a drive current to said light source, for a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of the drive current.

11. A light source drive which modulates a light source so as to cause the same to emit a light, comprising:

a MOS transistor connected in parallel with a drive current output part which outputs a drive current to said light source; and

a voltage control part which applies a voltage to a gate of said MOS transistor such that said MOS transistor enters a linear region for a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of the drive current.

12. The light source drive as claimed in claim 10, further comprising:

a time control part which controls said predetermined time period.

13. The light source drive as claimed in claim 11, further comprising:

a time control part which controls said predetermined time period.

14. The light source drive as claimed in claim 10, further comprising:

a resistance value control part which controls said output impedance value.

15. A light source drive which modulates a

light source so as to cause the same to emit a light, comprising:

a superposition current generation part which generates a superposition current approximately corresponding to a charging/discharging current needed for a capacitance occurring in parallel to said light source for a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of a drive current of said light source;

an addition/subtraction part which adds to or subtracts from the drive current the superposition current generated by said superposition current generation part; and

an output impedance control part which changes an output impedance value of a drive current output part which provides the drive current to said light source, for a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of the drive current.

16. A light source drive which modulates a light source so as to cause the same to emit a light,

comprising:

a superposition signal generation part which generates a superposition signal which indicates a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of a drive current of said light source;

a superposition current generation part which generates a superposition current approximately corresponding to a charging/discharging current needed for a capacitance occurring in parallel to said light source based on the superposition signal generated by said superposition signal generation part;

an addition/subtraction part which adds to or subtracts from the drive current the superposition current generated by said superposition current generation part; and

an output impedance control part which changes an output impedance value of a drive current output part which provides the drive current to said light source, for a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of the drive current.

17. A light source drive which modulates a light source so as to cause the same to emit a light, comprising:

a waveform shaping part which corrects a deformation of a light waveform of the light to be emitted from said light source; and

a waveform shaping time control part which controls a time period for which said waveform shaping part performs a waveform shaping operation.

18. A light source drive comprising:

a light source modulation part which modulates a light source so as to cause the same to emit a light;

a superposition current generation part which generates a superposition current in a predetermined amount for a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of a drive current for said light source;

an addition/subtraction part which adds to or subtracts from the drive current the superposition current generated by said superposition current generation part; and

a superposition time control part which controls said predetermined time period so as to cause it to have a predetermined value.

19. The light source drive as claimed in claim 18, wherein:

said superposition current generation part comprises a first delay part which controls a delay amount according to a current amount provided thereto so as to generate said predetermined time period;

said light source drive further comprises:

an oscillation part which comprises a second delay part having a characteristic which is equivalent to said first delay part;

a delay time control part which controls a current provided to said oscillation part so that the oscillation frequency of said oscillation part becomes a predetermined frequency; and

a part which determines the current provided to said first delay part of said superposition current generation part based on the current value controlled by said delay time control part.

20. A light source drive comprising:

a light source modulation part which modulates a light source so as to cause the same to emit a light;

an output impedance control part which changes an output impedance value of said light source modulation part for a predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of a drive current for said light source; and

a time control part which controls said predetermined time period so as to cause it to have a predetermined value.

21. The light source drive as claimed in claim 20, wherein:

said output impedance control part comprises a first delay part which controls a delay amount according to a current amount provided thereto so as to generate said predetermined time period; and

said light source drive further comprises:

an oscillation part which comprises a second delay part having a characteristic which is equivalent

to said first delay part;

a delay time control part which controls a current provided to said oscillation part so that the oscillation frequency of said oscillation part becomes a predetermined frequency; and

a part which determines the current provided to said first delay part of said output impedance control part based on the current value controlled by said delay time control part.

22. A light source drive comprising:

a light source modulation part which modulates a light source so as to cause the same to emit a light;

a superposition current generation part which generates a superposition current in a predetermined amount for a first predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of a drive current for said light source;

an addition/subtraction part which adds to or subtracts from the drive current the superposition current generated by said superposition current generation part;

an output impedance control part which changes an output impedance value of said light source modulation part for a second predetermined time period near at least one of a rising-up part and a decaying-down part of a waveform of a drive current for said light source; and

a time control part which controls said first predetermined time period and said second predetermined time period so as to cause them to have predetermined values.

23. The light source drive as claimed in claim 22, wherein:

said superposition current generation part comprises a first delay part which controls a delay amount according to a current amount provided thereto so as to generate said first predetermined time period;

said output impedance control part comprises a second delay part which has a characteristic equivalent to that of said first delay part of said superposition current generation part, and thereby generates said second predetermined time period; and

said light source drive further comprises:

an oscillation part which comprises a third delay part having a characteristic which is equivalent to said first delay part;

a delay time control part which controls a current provided to said oscillation part so that the oscillation frequency of said oscillation part becomes a predetermined frequency; and

a part which determines the current provided to said first delay part of said superposition current generation part and the current provided to said second delay part of said output impedance control part based on the current value controlled by said delay time control part.

24. The light source drive as claimed in claim 19, further comprising:

a communication part which performs a communication operation for data and command based on a clock signal having a predetermined frequency; and

a part detecting the oscillation frequency of said oscillation part by counting the number of pulses

output from said oscillation part during a predetermined frequency detection period generated based on said clock signal.

25. The light source drive as claimed in claim 21, further comprising:

a communication part which performs a communication operation for data and command based on a clock signal having a predetermined frequency; and

a part detecting the oscillation frequency of said oscillation part by counting the number of pulses output from said oscillation part during a predetermined frequency detection period generated based on said clock signal.

26. The light source drive as claimed in claim 23, further comprising:

a communication part which performs a communication operation for data and command based on a

clock signal having a predetermined frequency; and

a part detecting the oscillation frequency of said oscillation part by counting the number of pulses output from said oscillation part during a predetermined frequency detection period generated based on said clock signal.

27. The light source drive as claimed in claim 24, wherein:

said communication part performs a communication operation of transferring the data and command in serial in an order of an address and the data based on the clock signal at the predetermined frequency; and

said predetermined frequency detection period comprises a data communication period in case said address indicates a detection of a frequency of a high-frequency signal.

28. The light source drive as claimed in claim 25, wherein:

said communication part performs a communication operation of transferring the data and command in serial in an order of an address and the data based on the clock signal at the predetermined frequency; and

said predetermined frequency detection period comprises a data communication period in case said address indicates a detection of a frequency of a high-frequency signal.

29. The light source drive as claimed in claim 26, wherein:

said communication part performs a communication operation of transferring the data and command in serial in an order of an address and the data based on the clock signal at the predetermined frequency; and

said predetermined frequency detection period comprises a data communication period in case said address indicates a detection of a frequency of a high-

frequency signal.

30. The light source drive as claimed in claim 24, wherein:

said communication part performs a communication operation of transferring the data and command in serial in an order of an address and the data based on the clock signal at the predetermined frequency; and

said predetermined frequency detection period comprises the address and data communication period.

31. The light source drive as claimed in claim 25, wherein:

said communication part performs a communication operation of transferring the data and command in serial in an order of an address and the data based on the clock signal at the predetermined frequency; and

said predetermined frequency detection period comprises the address and data communication period.

32. The light source drive as claimed in claim 26, wherein:

said communication part performs a communication operation of transferring the data and command in serial in an order of an address and the data based on the clock signal at the predetermined frequency; and

said predetermined frequency detection period comprises the address and data communication period.

33. An optical information recording method of forming a record mark on a recording medium by applying a light emitted from a light source in a form of a pulse series, comprising the steps of:

a) adding a pulse of predetermined power for a predetermined time period after near a rising-up part of

each of at least some pulses of the pulse series; and

b) controlling a pulse width of the pulse thus added so as to control the formation of the record mark.

34. An optical information recording method of forming a record mark on a recording medium by applying a light emitted from a light source in a form of a pulse series, comprising the steps of:

a) adding a first addition pulse of predetermined power for a predetermined time period after near a rising-up part of each of at least some pulse of the pulse series;

b) adding a second addition pulse of predetermined power for a predetermined time period after near a decaying-down part of each of said at least some pulses of the pulse series; and

c) controlling a pulse width of the first addition pulse thus added and a pulse width of the second addition pulse thus added so as to control the formation of the record mark.

35. An optical information recording method of forming a record mark on a recording medium by applying a light emitted from a light source in a form of a pulse series, comprising the steps of:

a) adding or subtracting a predetermined addition current to a drive current of said light source for a predetermined time period after near a rising-up part or a decaying-down part of each of at least some pulses of the pulse series;

b) determining the predetermined time for the addition current such that a part of the addition current is approximately appropriated for charging/discharging a capacitance occurring in parallel to said light source and the remaining part of said addition current is used as an addition power to be applied so as to control the formation of the record mark.

36. The optical information recording method as claimed in claim 33, wherein:

a pulse width applied for a top pulse of the pulse series, a pulse width applied for a last pulse of

the pulse series and a pulse width applied for the other intermediate pulses are set respectively.

37. The optical information recording method as claimed in claim 34, wherein:

a pulse width applied for a top pulse of the pulse series, a pulse width applied for a last pulse of the pulse series and a pulse width applied for the other intermediate pulses are set respectively.

38. The optical information recording method as claimed in claim 35, wherein:

a pulse width applied for a top pulse of the pulse series, a pulse width applied for a last pulse of the pulse series and a pulse width applied for the other intermediate pulses are determined respectively.

39. The optical information recording method as claimed in claim 33, wherein:

the pulse width of each addition pulse thus added is determined according to lengths of information occurring preceding and subsequent to a relevant record mark.

40. The optical information recording method as claimed in claim 34, wherein:

the pulse width of each addition pulse thus added is determined according to lengths of information occurring preceding and subsequent to a relevant record mark.

41. The optical information recording method as claimed in claim 35, wherein:

the pulse width of each addition pulse thus added is determined according to lengths of information occurring preceding and subsequent to a relevant record

mark.

42. The optical information recording method as claimed in claim 36, wherein:

the pulse width of the addition pulse added to the top pulse is determined according to the mark length of the relevant record mark and the immediately preceding space length, and the pulse width of the addition pulse added to the last pulse is determined according to the mark length of the relevant record mark and the immediately subsequent space length.

43. The optical information recording method as claimed in claim 37, wherein:

the pulse width of the addition pulse added to the top pulse is determined according to the mark length of the relevant record mark and the immediately preceding space length, and the pulse width of the addition pulse added to the last pulse is determined

according to the mark length of the relevant record mark and the immediately subsequent space length.

44. The optical information recording method as claimed in claim 38, wherein:

the pulse width of the addition pulse added to the top pulse is determined according to the mark length of the relevant record mark and the immediately preceding space length, and the pulse width of the addition pulse added to the last pulse is determined according to the mark length of the relevant record mark and the immediately subsequent space length.

45. An optical information recording apparatus for forming a record mark on a recording medium by applying a light emitted from a light source in a form of a pulse series, comprising:

an addition current generation part which generates an addition current in a predetermined value

for a predetermined time period after near a rising-up part of each of at least some pulses of the pulse series;

an addition time setting part which determines said predetermined time period for the addition current; and

an adding part which adds the addition current to a drive current for said light source.

46. An optical information recording apparatus for forming a record mark on a recording medium by applying a light emitted from a light source in a form of a pulse series, comprising:

an addition current generation part which generates an addition current in a predetermined value for a predetermined time period after near a rising-up part or a decaying-down part of each of at least some pulses of the pulse series;

an addition time setting part which determines said predetermined time period for the addition current; and

an adding/subtracting part which

adds/subtracts the addition current to/from a drive current for said light source.

47. An optical information recording apparatus for forming a record mark on a recording medium by applying a light emitted from a light source in a form of a pulse series, comprising:

an addition current generation part which generates an addition current in a predetermined value for a predetermined time period after near a rising-up part or a decaying-down part of each of at least some pulses of the pulse series;

an addition time setting part which sets the predetermined time for the addition current such that a part of the addition current is approximately appropriated for charging/discharging a capacitance occurring in parallel to said light source and the remaining part of said addition current is used as an addition power to be applied; and

an adding/subtracting part which adds/subtracts the addition current to/from a drive current for said light source.

48. The optical information recording apparatus as claimed in claim 45, wherein:

said addition part setting part determines a pulse width of the addition pulse applied for a top pulse of the pulse series, a pulse width of the addition pulse applied for a last pulse of the pulse series and a pulse width of the addition pulses applied for the other intermediate pulses respectively.

49. The optical information recording apparatus as claimed in claim 46, wherein:

said addition part setting part determines a pulse width of the addition pulse applied for a top pulse of the pulse series, a pulse width of the addition pulse applied for a last pulse of the pulse series and a pulse width of the addition pulses applied for the other intermediate pulses respectively.

50. The optical information recording

apparatus as claimed in claim 47, wherein:

said addition part setting part determines a pulse width of the addition pulse applied for a top pulse of the pulse series, a pulse width of the addition pulse applied for a last pulse of the pulse series and a pulse width of the addition pulses applied for the other intermediate pulses respectively.

51. The optical information recording apparatus as claimed in claim 45, wherein:

said addition part setting part determines the pulse width of each addition pulse added according to lengths of information occurring preceding and subsequent to a relevant record mark.

52. The optical information recording apparatus as claimed in claim 46, wherein:

said addition part setting part determines the pulse width of each addition pulse added according to

lengths of information occurring preceding and subsequent to a relevant record mark.

53. The optical information recording apparatus as claimed in claim 47, wherein:

said addition part setting part determines the pulse width of each addition pulse added according to lengths of information occurring preceding and subsequent to a relevant record mark.

54. The optical information recording apparatus as claimed in claim 48, wherein:

said addition part setting part determines the pulse width of the addition pulse added to the top pulse according to the mark length of the relevant record mark and the immediately preceding space length, and determines the pulse width of the addition pulse added to the last pulse according to the mark length of the relevant record mark and the immediately subsequent

space length.

55. The optical information recording apparatus as claimed in claim 49, wherein:

said addition part setting part determines the pulse width of the addition pulse added to the top pulse according to the mark length of the relevant record mark and the immediately preceding space length, and determines the pulse width of the addition pulse added to the last pulse according to the mark length of the relevant record mark and the immediately subsequent space length.

56. The optical information recording apparatus as claimed in claim 50, wherein:

said addition part setting part determines the pulse width of the addition pulse added to the top pulse according to the mark length of the relevant record mark and the immediately preceding space length, and

determines the pulse width of the addition pulse added to the last pulse according to the mark length of the relevant record mark and the immediately subsequent space length.